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December 12, 1994

BY HAND DELIVERY

William F. Caton, Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C.

Re: Cable Television Cost-of-Service — MM Docket No. 93-215

Dear Mr. Caton:

The Commission's interim cost-of-service rules disallow virtually all cable operators' intangible assets from rate base, including intangible assets arising from long periods of losses; and establish a tentative overall return of 11.25%. On behalf of a group of cable operators and associations,[1] we are submitting two studies. The first is Kane, Reece, Associates, Inc., "Accumulated Return Deficiency Study" (December 1, 1994) (the "Kane, Reece Study"), which demonstrates that including intangible assets in cable operators' rate bases is necessary to provide cable investors with

[1] We submitted comments and reply comments in the ongoing rulemaking proceeding on behalf of this group in July and August, 1994. ***See*** Comments of Continental Cablevision, Inc., ***et al.,*** MM Docket No. 93-215 (July 1, 1994); Reply Comments of Continental Cablevision, Inc., ***et al.,*** MM Docket No. 93-215 (August 1, 1994).

any opportunity to earn a reasonable return on their investments. The second is A. Lawrence Kolbe & Lynda S. Borucki, "Rate of Return Recommendations In Cable Cost of Service Regulation: A Reply Statement" (December 1994) (the "Brattle Group Reply"), which shows that a minimum reasonable overall return for cable operators is 13%.

The Kane, Reece Study

The Kane, Reece study provides the Commission with detailed new information about the financial characteristics of cable television systems. The study is based on a sample of forty-one (41) systems, each of which has been operated by a single owner throughout its history. The study tracks each system's financial performance for as long as it takes for the system's regulated cable services to produce cumulative after-tax earnings of 11.25%.

The study shows that it takes an average of almost ***thirteen years*** for cable investors to earn a cumulative after-tax return of 11.25% on their investments. This proves that there is no basis in economic reality for limiting the rate base allowance for early losses to two years (which is what the Commission's interim cost-of-service rules do). To the contrary, after two years, the average cable system is still getting deeper into a financial hole, not -- as the interim rules would have it -- well on the way to digging itself out.[2]

The study also shows that substantial portions of the "acquisition premium" included in the purchase price for a typical cable system represent re-payment to the seller of the cumulative investment that the seller has put into the system in the form of losses and low earnings. The per-subscriber cumulative losses and low earnings invested in the average cable system grows from approximately $300 in the first year

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[2] We have previously provided evidence from the accounting firm of Deloitte & Touche showing that the Financial Accounting Standards Board pronouncement upon which the two-year limitation is based, SFAS-51, has no application to the question of how much of a rate base allowance should be made for prior period losses and low earnings in assessing cable rates under cost-of-service principles. Comments of Continental Cablevision, Inc., ***et al.,*** Exhibit D. We have also directed the Commission's attention to the case of ***City of Ottawa v. Sammons Communications,*** 836 F. Supp. 555, 561 (N.D. Ill. 1993), which embraces the correct rule, i.e., evaluating the reasonableness of current period returns in light of the entire life-cycle of the investment in a cable system.

of system operation to approximately $800 in the thirteenth year. Depending upon how far into a system's life-cycle the sale takes place, therefore, amounts in this range can be allowed into rate base with solid assurance that no "monopoly profits" are being recovered from the customers of the newly acquired system.

This new information compels a significant re-thinking of the interim rules' presumptions that start-up losses in rate base should be limited to two years, and that acquisition premiums should be disallowed because of fears that they might represent monopoly profits. We urge the Commission to promptly adopt rules that are, instead, consistent with the economic realities of the cable industry: allow into cable operators' cost-of-service rate bases all documented start-up losses and low earnings, as well as a substantial majority of, if not all, acquisition premiums.[3]

The Brattle Group Reply Statement

In July 1994, the Brattle Group provided a detailed financial analysis showing that cable companies were, on average, much riskier than telephone companies and, in particular, much riskier than the Commission's interim 11.25% overall after-tax return recognizes. Instead, an after-tax return of at least 13% would be required to recognize cable firms' true cost of capital. In August 1994, Bell Atlantic submitted an affidavit from Dr. James Vander Weide purporting to show that the Brattle Group's analysis was flawed, and that an overall cost of capital much lower than 11.25% would be justified.

The Brattle Group Reply Statement analyzes and rebuts Dr. Vander Weide's claims. Correcting only his two most significant errors results in an overall cost of capital for cable companies that is approximately equal to the Brattle Group's recommended 13% figure.

The cable industry has average penetration of less than 70%, almost universally available competition from free over-the-air broadcasts, videocassette rentals, and direct broadcast satellite services, and billions of dollars of unrecovered investment arising from massive system build-outs during the last decade. Common sense suggests that this industry will be perceived as much riskier than, and face a higher cost of capital than, the telephone industry, which has enjoyed more than 90% penetration for years and

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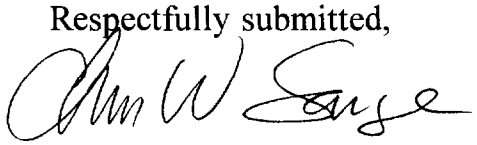
[3] The Commission should also direct the Cable Services Bureau to apply this new information in the context of pending cost-of-service cases.

which faces only limited (and expensive) competition from alternatives such as cellular telephone.

In these circumstances, it is not surprising that a sound analysis of the financial data relevant to both industries would result in a cost of capital for cable that is well above the 11.25% figure included in the interim rules. The Brattle Group Reply Statement provides a sound basis in the record for the Commission to take the step that common sense itself compels: establishing an allowed return for cable that is significantly higher than the allowed return for regulated telephone service.

Please feel free to contact me if you have any questions regarding this filing.

Respectfully submitted,



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Attachment 1:
The Kane, Reece Study

KANE REECE ASSOCIATES, INC.

ACCUMULATED RETURN DEFICIENCY STUDY

DECEMBER 1, 1994

Prepared For:

Various Cable Television Multiple System Operators

Valuation, Management & Technical Consultants

399 Thornall Street • Metro Park, New Jersey 08837-2236 • (908) 494-3700 • Fax (908) 494-8798

ACCUMULATED RETURN DEFICIENCY STUDY

DECEMBER 1, 1994

PART I - INTRODUCTION AND OVERVIEW

Kane Reece Associates, Inc. ("Kane Reece") of Metro Park, New Jersey has been engaged by a number of cable TV ("CATV") multiple system operators ("MSOs") to study the historical financial results as reported on the books and records of a sample of individual cable TV systems (collectively, "the Systems"; individually, a "System"). Participating MSOs include those listed in Exhibit F. The purpose of the study was to analyze the degree to which, and the period over which, cable operators incur losses and low earnings when building and expanding a cable system in a particular location. This study was prompted by the tentative decision by the Federal Communications Commission ("FCC") to limit recognition of such losses and low earnings to a two-year period following initial system start-up.

Kane Reece Associates is a national valuation, management and consulting firm serving the communications and media industry. The firm was founded in 1986 and its members have served in various technical, financial, and management capacities in the communications industry as well as the appraisal industry. Members of the firm hold various professional designations including CPA, CFA, ASA, and PE. Within the last eight years, the firm has analyzed hundreds of cable systems across the country on behalf of financial institutions and telecommunications companies. The purpose of the engagements have included due diligence for investors, strategic planning, industry analysis, allocation of acquisition purchase price for federal tax and book financial reporting (APB16) purposes, as well as valuations for solvency opinions, fairness opinions, buy-sell agreements, litigation, estates and partnership interests.

To conduct this study, Kane Reece obtained a sample of approximately sixty sets of historical book income statements, balance sheets, subscriber reports and channel line-up data related to original build CATV systems. These financial results were submitted

on the basis of a strict assurance of the confidentiality of data relating to individual Systems. Based on Kane Reece's experience and expertise in providing valuation, management, and technical consulting services to the CATV industry, financial and operational data was analyzed to select Systems where financial performance has not been affected by the presence of intangible assets typically associated with acquisitions. The objective was to track the Systems' financial performance back to System inception or as close to that point in time as possible. A sample of 41 Systems was selected that fit this original build or near original build (Systems so old that they have been completely rebuilt) objective. The Systems sampled represent a cross section of the U.S. cable industry, both geographic and demographic. Systems range from urban to suburban to rural, and have been built over a time span beginning in the late 1960s through the late 1980s. The average year of the inception of System build for the sample was 1979; the average year of data tracking begins in 1981.

A key objective of the study is to analyze the Systems' financial performance to calculate the pro forma accumulated return deficiency ("ARD") on an annual and cumulative basis. From a practical business perspective, ARD represents a form of investment in the System. In many cases, this investment represents a substantial portion of a System's fair market value. In the case of Systems that have remained under a single entity's ownership, this investment remains implicit in the System's financial records. In the case of Systems that have been sold to other operators, this investment is reflected in the purchase price for the System. In either case, if this investment is ignored, in whole or in part, in setting rates in a cost-of-service proceeding, the cable operator will not earn a reasonable return on its actual investment in the System. This would deny the system operator a reasonable return on its investment and greatly impede its ability to invest in additional and enhanced service offerings.

Once the annual and cumulative return deficiency was derived for each System, this value was tracked on a per basic subscriber basis over the build cycle of each sampled System. This was done on a calendar year, as well as on a project year (year from inception) basis.

This analysis provides a basis for determining how long it takes for a newly constructed cable system to reach the "break-even" point (cumulative ARD equals zero). We determined, based on our sample, that break-even occurs approximately 13 years after initial operations, based on a provision for an after tax rate of return of 11.25%.

Our methodology is conservative -- that is, it tends to understate the ARD and the time to reach the breakeven point -- in three important respects. First, the 11.25% overall return is, in our judgement, far too low for cable operators generally, and certainly far too low over the decade of the 1980s when most ARDs were being accumulated. Second, of necessity, data for our sample systems ended with 1993. For any system that still had an ARD in 1993, we assumed that a 100% payback of that ARD would occur in 1994. Third, our study focused on regulated services, and allocated costs between regulated and non-regulated services based on the number of channels of each service type in 1993. This was necessary due to lack of detailed historical year-by-year penetration or similar "usage" data, but necessarily over-allocates costs to non-regulated operations for two primary reasons: (1) non-regulated pay, PPV and other services typically have far lower penetration than regulated services, as well as a disproportionately higher per channel share of programming, marketing and churn-related expenses than regulated services; and (2) using 1993 channel line-ups allocates more cost to non-regulated services, thereby understating ARDs in earlier years when pay and other non-regulated services represented a smaller percentage of the channel offerings.

From a business and economic perspective, there is nothing surprising about the fact that it takes 13 years or more to break even on a cable system. It merely reflects (1) that the CATV industry is a capital intensive business with virtually a continuous "appetite" for expansion, upgrade, and rebuild investment, (2) that cable systems are long-lived assets, (3) that cable operators recognize this fact and have operated their systems based on an appreciation of it, and (4) that they have taken this fact into account when systems change hands. But from a regulatory perspective, the implications of this result are profound. Simply stated, if regulators assessing the reasonableness of cable rates based on cable operators' costs ignore the long life cycle of cable assets, they will inevitably underestimate the investment in a cable system and correspondingly overestimate the level of "return" that current or proposed rates produce. Rate decisions based on this misunderstanding will systematically deprive cable operators of a reasonable return in their actual investments.

Tables 1A, 1B, and Figure 1, following, summarize the results of this study and the magnitude of this effect. Taking inflation into account, the investment in original build or fully rebuilt Systems derived from losses or low earnings grows from slightly less than $300 per subscriber in year one (the first year of System operation) to slightly more than $800 per subscriber in year 14. These figures are a direct measure of the actual investment in cable Systems that is not reflected in a cost-based rate methodology that focuses only on the net book value of tangible assets in the current year.

Please note that the "dip" in year thirteen and subsequent "jump" in year fourteen are anomallies in the data, since the number of systems with ARDs remaining in the average calculations tapers off significantly in the last two years. Additionally, the

TABLE 1A
SUMMARY OF RESULTS
CUMULATED ARD PER BASIC SUBSCRIBER
BY SYSTEM INCEPTION YEAR

ARD/Subcriber ($)

Year	Inflation Adjusted Average	Average
1	193	292
2	202	297
3	246	351
4	305	422
5	335	450
6	369	482
7	420	532
8	457	562
9	529	631
10	595	690
11	663	746
12	677	739
13	503	534
14	786	809

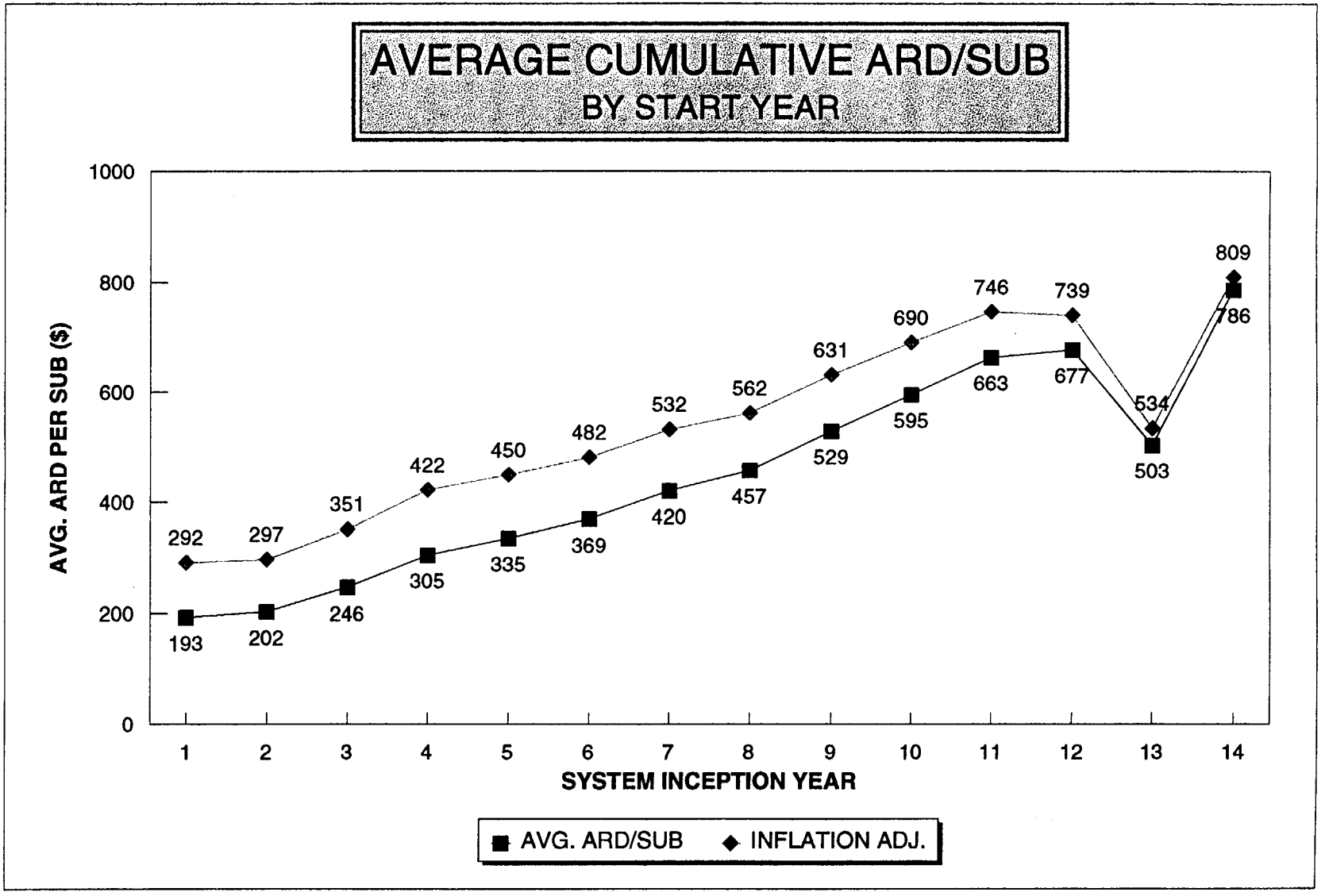
TABLE 1B
YEARS TO BREAK-EVEN FROM BUILD DATE*
BY CALENDAR YEAR

from build date**	12.6 years

* Systems that have not yet reached break-even as of year end 1993 are assumed to breakeven in 1994; thus years to break-even are conservative.

**Build date from System-provided data or from *Television & Cable Factbook*, Warren Publishing, Inc., 1994 Edition; breakeven period measured from initial data date is 10.6 years.

FIGURE 1



KANE REECE ASSOCIATES, INC.

breakeven period calculation assumes that the twenty four (of the 41 system sample) systems with positive ARDs in 1993, all breakeven in 1994. Clearly, the breakeven period will be longer on average and vary by system.

PART II - INDUSTRY REVIEW

In order to appreciate the significance of the ARD issue, it is necessary to provide a brief overview of the history and near-term prospects of the cable industry. As will be seen, the need for a realistic and economically rational treatment of ARD by regulatory authorities is particularly important due to the unprecedented confluence of competitive, technological and market developments that will buffet cable operators over the near- and middle-term (the next two to eight years). If cable operators are denied a fair opportunity to obtain a return on their real investments in regulated services during this period, then it is quite likely that they will never have an opportunity to do so, seriously impeding their ability to compete on a level playing field in developing the informational superhighway and bringing new services and technology to their subscribers.

Early History

The first cable television system was developed in Mahanoy, Pennsylvania in 1948. This system acted as a re-distributor of off-air television broadcast signals. Through the mid-1970s, technical complications and limited perceived product value by potential customers confined industry growth to areas of limited or no off-air television reception. By that time, 29% of television homes in the United States had cable television service available to them, and approximately 12% to 15% of television households subscribed.

Historic Growth and Forecasts

During the late 1970s and early 1980s, the cable television industry was characterized by a period of rapid growth both in the number of communities wired and in the number of subscribers. This growth was spawned by an easing of government regulations, the increased availability of capital, more cable exclusive programming,

and improving technology. For example, Home Box Office and other satellite-delivered, cable-exclusive program services were developed in the mid-1970s. Following this period of intensive construction, the industry's attention in the latter half of the 1980s turned to new programming, geographic consolidation ("clustering"), new sources of revenues (e.g. pay-per-view), increased competition with broadcasters, the need for more dynamic consumer marketing, and the potential adverse impact of new government regulations.

From 1980 to 1993 the number of cable subscribers almost tripled, to slightly over 57 million, representing a compound annual growth rate ("CAGR") of 9.3%. During that same time period, pay TV units grew from 9 million to over 41 million, representing a 12.3% CAGR. But the market ceiling on basic penetration appears to have been reached: according to Kagan, while basic cable TV is now in nearly 61% of United States television households, it is projected to rise to only 65% by 2003[1]. As things now stand, essentially everyone who wants basic cable has it.

As a result, while basic subscribers will continue to grow as the market grows, the rate of growth will be much slower than in the past. While basic cable units grew at a CAGR of 9.3% between 1980 and 1993, they are expected to grow only at a 1.6% rate between 1993 and 2003. Pay unit growth patterns exhibit an even more pronounced slowing. Between 1980 and 1993 pay units grew at a CAGR of 12.3%; however, between 1993 and 2003 the growth rate is expected to decline to 2.4%. Subscriber demand for pay services has been reduced primarily due to increased competition from home video (there are more VCRs than cable subscribers), new basic cable networks, and pay-per-view.

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[1]Source: *Cable TV Financial Databook*, 1994 published by Paul Kagan Associates, Inc.

Historical and projected subscriber growth rates and industry revenues are shown in Table 2.

Regulation

The Cable Communications Policy Act of 1984 (the "1984 Act") had a major impact on the CATV industry. The most significant change was the deregulation of basic cable rates. Effective December 29, 1986, cable operators were able to adjust monthly subscription rates on basic service based on market conditions, rather than being limited to rates approved by local and state authorities. The 1984 Act also eased the franchise renewal process. This era in the cable industry was characterized by strong customer growth, and major capital investments in plant, new technology and new program channels and services. This "deregulated" cable period came to an end with the passage of the "Cable Television Consumer Protection Act of 1992" (the "1992 Act"). Congress authorized the FCC to promulgate and enforce the major elements of the 1992 Act.

Some of the key elements and issues addressed by the 1992 Act are:

- "Retransmission consent" whereby local TV stations are allowed to negotiate with cable operators for consent, for a fee, to retransmit their signals on cable. Alternatively, local TV stations could opt for "must carry", which requires cable systems to carry the station for no fee.

- The "anti-buythrough" provision requires cable operators to install expensive new addressable technology over the next ten years so subscribers would no longer be required to buy "full basic", or the "second tier," before being eligible to buy premium and pay-per-view services.

- Rates of the lowest tier of local broadcast signals are subject to local regulation of most cable systems (97%) under guidelines developed by the FCC; expanded tiers of service may be subject to

TABLE 2
CABLE TELEVISION INDUSTRY STATISTICS

CABLE INDUSTRY GROWTH STATISTICS

Yr End	TV Homes (Millions)	TV Homes Passed (Millions)	Basic Cable Subscribers* (Millions)	Basic Cable % of Homes Passed	Pay Cable Units (Millions)	Pay Cable Units % of Homes Passed	Pay Cable Units % of Basic
1980	79.9	32.8	18.1	55.0%	9.1	27.9%	50.6%
1981	81.3	41.2	22.5	54.7%	15.5	37.5%	68.6%
1982	82.4**	49.1	27.2	55.5%	20.8	42.4%	76.4%
1983	83.3	55.9	31.4	56.1%	26.4	47.3%	84.2%
1984	84.9	60.5	34.2	56.6%	30.0	49.5%	87.5%
1985	86.5	64.7	36.7	56.6%	30.6	47.3%	83.5%
1986	87.7	69.4	39.7	57.2%	32.1	46.2%	80.8%
1987	89.2	73.1	42.6	58.3%	34.8	47.6%	81.6%
1988	90.9	77.2	45.7	59.2%	38.8	50.3%	85.0%
1989	91.6	82.8	49.3	59.5%	41.1	49.6%	83.3%
1990	91.1	86.0	51.7	60.2%	41.5	48.3%	80.2%
1991	92.1	88.4	53.4	60.4%	39.9	45.1%	74.7%
1992	93.1	89.7	55.2	61.5%	40.7	45.4%	73.7%
1993	94.0	90.6	57.2	63.1%	41.5	45.8%	72.6%
1994 (Est.)	94.9	91.6	58.8	64.2%	43.5	47.5%	74.0%
1998 (Est.)	98.8	94.2	63.1	67.0%	48.0	50.9%	76.0%
2003 (Est.)	103.8	95.7	67.2	70.2%	52.4	54.7%	78.0%

COMPOUND AVERAGE ANNUAL GROWTH RATES (CAGR)

1980-1993	1.3%	8.1%	9.3%	12.3%
1993-1998	1.0%	0.8%	2.0%	2.9%
1993-2003	1.0%	0.5%	1.6%	2.4%

*Prior to 1982, basic subscribers and homes passed reflect quantities in those systems offering pay TV.
**Estimate (conflicting data in published reports).

TABLE 2
CABLE TELEVISION INDUSTRY STATISTICS (Continued)

CABLE INDUSTRY REVENUES
($ Millions)

Year	1992	1993	1994	1998	1993-1998 CAGR
Basic Cable Revenue	$ 12,433	$13,528	$13,124	$16,594	4.2%
Expanded Basic Revenue	1,003	1,642	1,871	2,487	8.7%
Pay Cable Revenue	4,980	4,633	4,963	6,450	6.8%
PPV Revenue:					
PPV Movie Revenue	184	315	384	552	
PPV Event Revenue	220	241	284	608	
Subtotal PPV Revenue	404	556	668	1,160	15.8%
Other Video Revenue*:					
Advertising (Net)	872	984	1,256	2,101	
Digital Audio	15	37	62	379	
Home Shopping	100	128	143	303	
Misc.	1,238	1,412	585	1,213	
Subtotal Other Video Rev	2,225	2,561	2,046	3,996	9.3%
Digital Revenue**:	n/a	n/a	n/a	2,816	n/a
Total Video Revenues	$ 21,045	$22,920	$22,672	$33,503	7.9%
Video Revenue/Average Sub	$ 32.20	$ 33.99	$ 32.57	$ 44.54	5.6%
Competitive Access Revenue	$ n/a	$ 101	$ 341	$ 1,196	63.9%
Cable Telephony Revenue	$ n/a	$ n/a	$ n/a	$ 1,099	n/a
Total Video & Telephony Rev.	$ 21,045	$23,021	$23,013	$35,798	9.2%

Sources: Paul Kagan Associates, Inc., *The Cable TV Financial Databook*, June 1994.
Kane Reece Associates, Inc. Growth Rate Calculations.

*1992 from the *The Cable TV Financial Databook*, June 1993.
**Digital Revenue Includes: Near video-on-demand/video-on-demand movie and TV, Game subscription, Digital la carte, and Digital data/interactive services.

rate regulation if subscribers complain to the FCC and cable rates are found to be "unreasonable" on a case-by-case basis by the FCC.

- New competition is "encouraged" by the bill from new cable operators, municipalities and alternate video distributors.

- The number of cable subscribers any one cable operator may serve through cable systems owned or financially backed by that operator may be limited by the FCC; other provisions affect channel positioning, customer service standards, and the number of channels that can be occupied by a programmer owned or backed by a cable operator.

- An anti-trafficing provision prohibits cable operators from selling or transferring ownership in a cable system for at least three years after buying or building the system.

Other issues addressed are:

- Customer service standards
- Home wiring ownership after subscriber cancels cable service
- Sports migration to pay channels
- Technical standards
- Indecency
- Equal employment opportunity - expansion of job categories covered
- Electronic equipment compatibility
- Home shopping - public interest study
- Direct Broadcast Satellite ("DBS") public interest study.

Many of the above elements are still being contested in the courts. While the industry awaits further FCC interpretations of the 1992 Act and the outcome of various court actions, it is clear that the ground rules for the industry have changed.

Following a "revenue freeze" imposed by the FCC in April 1993, rate regulation became effective on September 1, 1993, followed by revised benchmarks effective as

of May 15, 1994. In general, the new regulations call for an approximate 17% reduction in basic cable service rates and a cost-based approach to pricing installation and customer premise equipment such as remote control devices, converters and additional outlets. The full impact of these rules and regulations on the industry is still unclear. Moreover, each individual cable franchise, even within a multiple franchise operating system, can be affected differently.

Cable operators, and especially many small cable operators, have been hit quite hard by the new rate regulations, with individual company estimates ranging from negative impacts of 5% to 15% on revenue and 1% to 8% on margins.

Consolidation

The uncertainty of the impact of regulation, the timing and financing of the "information superhighway" and its associated potential new revenue sources, and the advent of a competitive environment have created a market for cable systems driven by a need for consolidation. This is evident in the unprecedented number of large cable operators who have put their cable systems up for sale this year, serving a staggering 13 million subscribers or 25% of the industry. As of the date of this report, this list includes such renowned companies as Newhouse Broadcasting Corporation, Hallmark, Inc., Times Mirror Cable Television, the Providence Journal Corporation, Viacom Cable, Inc., Gaylord Entertainment Corporation, Houston Industries, Inc., Chronicle Publishing Corporation, TeleCable Corporation, Maclean Hunter, Tele-Media Corporation, Sammons Enterprises, Inc., and SBC Communications, Inc. (Southwestern Bell Corporation). The industry consensus is that consolidation is necessary in order to survive the negative impacts of re-regulation and additional competition, and provide operators with greater access to investment capital and greater leverage with equipment suppliers.

Cable Financing

Regardless of the size of current transactions, the ability to complete a transaction requires the use of creative financing. The traditional financing vehicles, i.e., senior debt and mezzanine financing, have become limited as the investment community tries to analyze the impact of re-regulation. New areas of financing include strategic alliances, e.g., Time Warner/US West; recently increased junk bond activity, e.g., seller paper; and increased liquidity from non-traditional investors, e.g., telco acquisitions such as US West's acquisition of the Bass Atlanta systems and Southwestern Bell's acquisition of the Hauser Washington D.C. area systems.

Industry Trends

The latter half of the 1990s is expected to bring continued growth in both cable television subscriptions and revenues, albeit at a much slower growth rate than in the past. This reflects a much more competitive marketplace and a maturing of the traditional basic cable industry. As costs continue to escalate, this will limit margins obtainable from core markets. As a result, the industry is likely to focus on new programming and alternative viewing selections, such as staggered starting times on alternative channels for entertainment events for additional sources of revenue. Technology will play a major role in the continued growth and profitability of the industry. The use of fiber optic technology for 750 MHz systems with 500-1,500 households per node is now an economical approach for industry rebuilds in high density areas. This, along with developments in digital television signal compression technologies, will allow cable systems to offer more diverse programming to subscribers, assuming that high-quality programming becomes available and that regulatory decisions do not force cable operators to price these new services at rates that cannot be sustained in the market.

Programming and Services: While it is difficult to make firm predictions in an industry subject to such intense competitive, technological and regulatory forces, it appears to

Kane Reece that the next five to ten years will see additional growth of CATV revenues from the "other" revenue category (other than basic and pay cable subscription revenue) such as advertising, pay-per-view ("PPV"), home shopping, digital audio, telephony, and potential new technology oriented services such as interactive games and computer related services. In 1993 "other" revenue (see Table 2) was approximately $2.6 billion, or 11%, of the industry's $23.0 billion in revenues. As depicted in Table 2, between 1993 and 1998 "other" revenues growth is projected to average a 9.3% CAGR. Basic cable subscription revenue is expected to grow at a 4.2% CAGR, with pay services revenue increasing by 6.8% CAGR.

A review of the *U.S. Industrial Outlook 1994* reveals similar growth projections for industry revenues and subscriber growth. *U.S. Industrial Outlook 1994* projects a 5%-7% annual increase in CATV revenues over the next five years.

As of December 31, 1993, over 61% of United States households had basic cable television. In addition to providing broadcast stations, basic cable offers the availability of program alternatives in the form of basic cable networks. Each of the six largest basic service networks (ESPN, Cable News Network, USA Network, Nickelodeon, TBS Superstation, and The Discovery Channel) has over 60 million subscribers. Other basic cable networks include The Learning Channel, Headline News, Lifetime, The Travel Channel, The Family Channel, C-Span, MTV, TNT, Arts & Entertainment, The Weather Channel, WWOR-TV, Home Shopping Network, The Nashville Network, CNBC, and Comedy Channel, among others.

Pay television services include channels for which an optional additional fee is paid to the CATV operator. According to *CableVision Magazine*, May 23, 1994, the top five movie oriented pay channels serve over 44 million subscribers. The top five movie entertainment services are Home Box Office (17.9 million subscribers), Showtime,

Cinemax, Disney Channel, and Encore. In addition to these services, regional and local sport networks are sometimes offered as pay services.

According to Veronis, Suhler & Associates *Communications Industry Forecast* (1994) the three networks' audience levels, which were declining, have now stabilized, although their share of advertising dollars has continued to decline. In 1994, the three networks' portion of total TV advertising dollars are projected to be about 33.6%, compared with an estimated 44.7% in 1980. Much of this market share loss has come to cable television, which offers advertisers both growing overall audiences and opportunities to reach niche audiences attracted by specialized programming.

Cable television advertising is proving to be especially attractive for small, local advertisers whose markets are too small to be efficiently covered by broadcasters. Due to the niche nature of cable television programming, cable advertising provides an attractive, cost effective advertising medium to target specific consumer demographics. Additionally, cable advertising interconnects, serving broad metropolitan areas, have developed to facilitate the booking at multiple cable systems of advertising time by national and regional advertisers.

Pay-per-view, and in fact all pay services, has not achieved the levels of penetration and profitability that were anticipated in the mid-1980s. It is suspected that the flourishing home video business is a major factor in the lack of performance in this segment of the cable industry. Additionally, during 1992 and 1993 there were fewer big events, e.g. boxing, to draw viewers. Veronis, Suhler & Associates' *Communications Industry Forecast* (1994) summarizes the recent performances of PPV as follows,

> Spurred by an improved economy and steady rates, annual pay-per-view movie buys for each PPV household rose to 3.1 in 1993, up from 2.3 in 1992 and 1.9 in 1991. Total spending on pay-per-view movies rose to

$271 million in 1993 compared with $184 million in 1992. (Spending on pay-per-view events totaled $241 million in 1993.) Although expanding, pay-per-view has yet to make a dent in the home video market. Annual rentals per VCR household averaged 50.3 in 1993, an increase of 0.7 over 1992, just under the increase for pay-per-view movies. Although the average price of home video rental rose in 1993, a rented videocassette remains nearly $2 below the average pay-per-view movie. In our view, the disparity in pricing accounts for the disparity in usage.

In the future, pay-per-view may become a significant source of revenues as the technology improves and the acquisition of movies and event programming becomes more aggressive, thereby improving their availability on cable relative to theatrical and videocassette releases. A number of the large MSOs, as well as both cable and broadcast networks, have recently shown increased interest in both acquiring and developing new programming. Examples include cable programmers' purchase of the rights to numerous professional sporting events including football, baseball, basketball, hockey, and boxing, and the acquisition by cable television programmers of the 1992 Olympic Game rights (about $20 million gross). Industry experts agree that this is a long-term trend which will continue to intensify cable's already strong and growing competition with the broadcasting industry.

Technology Developments

New revenue sources will be dependent upon new delivery systems. Emerging technologies which will influence the new delivery systems are briefly described below.

Fiber Optics: Optical fiber technology is rapidly being deployed in cable television systems and is projected to grow at an annual rate of 25% in the 1990s. Its use provides several advantages over traditional coaxial copper cable:

- Cost effective upgrades of channel capacity by replacing "trunk" without the high cost of replacing all cable to each individual home, resulting in the "hybrid" fiber-coaxial system commonly in use today;

- Improved reliability, by reducing the number of electronics required between the headend and the user;
- Reduced operating costs due to fewer electronics which need periodic "balancing" or fine-tuning;
- Improved signal quality, due to fewer electronics and less possibility of static or electrical interference.

HDTV: High Definition Television has been in development for over fifteen years and now seems destined to become a cost-effective consumer option in the next few years. It has been successfully demonstrated half a dozen times on existing cable systems in the United States and Canada. Basically, the term HDTV represents a variety of technological approaches to improved clarity and quality.

The current broadcast television transmission format was developed based upon engineering and technology available in the late 1940s and early 1950s. The FCC is in the process of establishing an improved format based upon current technologies and competing systems are being tested under FCC auspices. The end objective is to achieve TV pictures that are more like movie screens than current TV sets. The FCC expects its technical committee's report of the test results later this year and expects to issue a Notice of Proposed Rule Making early next year. New rules will need to accommodate both broadcasters and cable operators.

To deliver the sharper pictures of high definition TV, it will be necessary for the FCC to increase the bandwidth of each TV channel beyond its current 6 MHz allocation. The FCC will also protect the existing base of television sets by requiring that broadcasters and cablecasters transmit signals that are compatible with existing sets for a period of several years.

Broadcasters and cable operators will need to make changes to their current facilities to accommodate the new standard. We expect that the major television networks and the premium program services will be the first to offer programming in the high definition